LETTERS TO THE EDITORS

MORE ON DILUTION

Dear Sir:

It is not clear to me why Mr. Hull[1] should be "puzzled" that dilution of containment building atmosphere with fresh air[2] reduces the quantity of matter released per unit time. Obviously, if the concentration of matter within the building is reduced in time due to dilution with uncontaminated air, the release rate will likewise decrease with time, assuming the air exhaust rate is constant and mixing is fairly uniform. As a consequence, Sutton's equation for a continuous constant release is no longer valid. I have recently modified Sutton's "puff" release equation to account for a source varying in time due to both radioactive decay and building dilution prior to stack release.

Ira Charak

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1. Letter, Andrew P. Hull to the Editor, *Nucl. Appl.*, **2**, 9 (1966).

2. H. J. Larson and K. Stratton, "The Evaluation and Measurement of Reactor-Safety Performance," *Nucl. Appl.*, **1**, 225 (1965).

To this Mr. Hull replies:

Dear Sir:

As I stated in my letter, the controlling parameter is the *amount* of activity released per unit time and not its concentration. If the authors of the original article assumed, as Charak seems to do, that the main exhaust fan can be operated at only one constant flow rate, then their scheme makes some sense. However, it appears to me that control of the stack release rate might also be achieved as simply by providing some means for varying the flow rate of this fan.

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